Biochemistry (Moscow) 1996 vol.61 N1, pages 81-86

Secreted hydrolases from streptomycin-resistant strains of Bacillus intermedius

Sharipova M., Balaban N., Nekhotyaeva N., Itskovich E., Shakirov E., Leshchinskaya I., Rudenskaya G.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Alkaline phosphatases and serine proteinases have been isolated from the culture liquid of streptomycin-resistant strains of Bacillus intermedius using ion-exchange and affinity chromatography and FPLC. Substrate blotting and electrophoresis revealed two phosphatase forms with molecular masses of 40 and 50 kD. The enzyme had maximal activity at pH 9.5 and 50°C and could cleave the phosphate moiety from a range of substrates. It is suggested that both forms of the phosphatase are products of processing that involves a serine proteinase. Two proteinases, with molecular masses of 29 and 33 kD, were purified to homogeneity from the culture liquid of A. intermedius S7. The protein from the major peak was identical in its properties to an earlier described serine proteinase. The minor peak was 5% of the major one. These enzymes had different pH optima. Inhibitor analysis indicated that the minor peak is also a serine proteinase.

Keywords

Alkaline phosphatase, Bacillus, FPLC, Properties, Serine proteinase